

CLAIMS

What is claimed is:

- 1 1. A method comprising:
 - 2 quantizing coefficients into quantized values, each quantized value having an
 - 3 integer part representing a base layer and a fractional part representing enhancement
 - 4 layers; and
 - 5 encoding the fractional parts into an enhancement layer bitstream.
- 1 2. The method of claim 1 further comprising:
 - 2 encoding the integer parts into a base layer bitstream.
- 1 3. The method of claim 1 further comprising:
 - 2 transforming an input into the coefficients.
- 1 4. The method of claim 3 further comprising:
 - 2 removing temporal redundancies exhibited by the input.
- 1 5. The method of claim 1, wherein the enhancement layers are frequency ordered.
- 1 6. A method comprising:
 - 2 decoding an enhancement layer bitstream into quantized fractional values
 - 3 representing enhancement layers;
 - 4 applying an inverse quantization to the quantized fractional values to create
 - 5 coefficients representing the enhancement layers;
 - 6 applying an inverse transformation to the coefficients to create the enhancement
 - 7 layers; and

8 combining the enhancement layers with a base layer.

1 7. The method of claim 6 further comprising:
2 adding temporal redundancies to the base layer.

1 8. A method comprising:
2 decoding an enhancement layer bitstream into quantized fractional values
3 representing enhancement layers;
4 applying an inverse quantization to the quantized fractional values to create
5 coefficients representing the enhancement layers;
6 combining the coefficients representing the enhancement layers with coefficients
7 representing a base layer; and
8 applying an inverse transformation to the combined coefficients.

1 9. The method of claim 8 further comprising:
2 adding temporal redundancies to the coefficients representing the base layer

1 10. A method comprising:
2 decoding an enhancement layer bitstream into quantized fractional values
3 representing enhancement layers;
4 combining the quantized fractional values representing enhancement layers with
5 quantized integer values representing a base layer;
6 applying an inverse quantization to the combined quantized values to create
7 coefficients; and
8 applying an inverse transformation to the coefficients.

1 11. The method of claim 10 further comprising:
2 adding temporal redundancies to the quantized integer values representing the
3 base layer.

1 12. A machine-readable medium containing instructions, which when executed by a
2 machine, cause the machine to perform operations comprising:
3 quantizing coefficients into quantized values, each quantized value having an
4 integer part representing a base layer and a fractional part representing enhancement
5 layers; and
6 encoding the fractional parts into an enhancement layer bitstream.

1 13. The machine-readable medium of claim 12, wherein the operations further
2 comprise:
3 encoding the integer parts into a base layer bitstream.

1 14. The machine-readable medium of claim 12, wherein the operations further
2 comprise:
3 transforming an input into the coefficients.

1 15. The machine-readable medium of claim 14, wherein the operations further
2 comprise:
3 removing temporal redundancies exhibited by the input.

1 16. The machine-readable medium of claim 12, wherein the enhancement layers are
2 frequency ordered.

1 17. A machine-readable medium containing instructions, which when executed by a
2 machine, cause the machine to perform operations comprising:
3 decoding an enhancement layer bitstream into quantized fractional values
4 representing enhancement layers;
5 applying an inverse quantization to the quantized fractional values to create
6 coefficients representing the enhancement layers;
7 applying an inverse transformation to the coefficients to create the enhancement
8 layers; and
9 combining the enhancement layers with a base layer.

1 18. The machine-readable medium of claim 17, wherein the operations further
2 comprise:
3 adding temporal redundancies to the base layer.

1 19. A machine-readable medium providing instructions, which when executed by a
2 processing unit, cause the processing unit to perform operations comprising:
3 decoding an enhancement layer bitstream into quantized fractional values
4 representing enhancement layers;
5 applying an inverse quantization to the quantized fractional values to create
6 coefficients representing the enhancement layers;
7 combining the coefficients representing the enhancement layers with coefficients
8 representing a base layer; and
9 applying an inverse transformation to the combined coefficients.

1 20. The machine-readable medium of claim 19, wherein the operations further
2 comprise:
3 adding temporal redundancies to the coefficients representing the base layer.

1 21. A machine-readable medium providing instructions, which when executed by a
2 processing unit, cause the processing unit to perform operations comprising:
3 decoding an enhancement layer bitstream into quantized fractional values
4 representing enhancement layers;
5 combining the quantized fractional values representing enhancement layers with
6 quantized integer values representing a base layer;
7 applying an inverse quantization to the combined quantized values to create
8 coefficients; and
9 applying an inverse transformation to the coefficients.

1 22. The machine-readable medium of claim 21, wherein the operations further
2 comprise:
3 adding temporal redundancies to the quantized integer values representing the
4 base layer.

1 23. A system comprising:
2 a processor;
3 a memory coupled to the processor though a bus; and
4 an encoding process executed from the memory by the processor to cause the
5 processor to quantize coefficients into quantized values, each quantized value having an
6 integer part representing a base layer and a fractional part representing enhancement
7 layers, and to encode the fractional parts into an enhancement layer bitstream.

1 24. The system of claim 23, wherein the encoding process further causes the
2 processor to encode the integer parts into a base layer bitstream.

1 25. The system of claim 23, wherein the encoding process further causes the
2 processor to transform an input into the coefficients.

1 26. The system of claim 25, wherein the encoding process further causes the
2 processor to remove temporal redundancies exhibited by the input.

1 27. The system of claim 23, wherein the enhancement layers are frequency ordered.

1 28. A system comprising:
2 a processor;
3 a memory coupled to the processor though a bus; and
4 a decoding process executed from the memory by the processor to cause the
5 processor to decode an enhancement layer bitstream into quantized fractional values
6 representing enhancement layers, to apply an inverse quantization to the quantized
7 fractional values to create coefficients representing the enhancement layers, to apply an
8 inverse transformation to the coefficients to create the enhancement layers, and to
9 combine the enhancement layers with a base layer.

1 29. The system of claim 28, wherein the decoding process further cause the processor
2 to add temporal redundancies to the base layer.

1 30. A system comprising:
2 a processor;
3 a memory coupled to the processor though a bus; and
4 a decoding process executed from the memory by the processor to cause the
5 processor to decode an enhancement layer bitstream into quantized fractional values
6 representing enhancement layers, to apply an inverse quantization to the quantized

7 fractional values to create coefficients representing the enhancement layers, to combine
8 the coefficients representing the enhancement layers with coefficients representing a base
9 layer, and to apply an inverse transformation to the combined coefficients.

1 31. The system of claim 30, wherein the decoding process further cause the processor
2 to add temporal redundancies to the coefficients representing the base layer

1 32. A system comprising:
2 a processor;
3 a memory coupled to the processor though a bus; and
4 an decoding process executed from the memory by the processor to cause the
5 processor to decode an enhancement layer bitstream into quantized fractional values
6 representing enhancement layers, to combine the quantized fractional values representing
7 enhancement layers with quantized integer values representing a base layer, to apply an
8 inverse quantization to the combined quantized values to create coefficients, and to apply
9 an inverse transformation to the coefficients.

1 33. The system of claim 32, wherein the decoding process further cause the processor
2 to add temporal redundancies to the quantized integer values representing the base layer.

1 34. An apparatus comprising:
2 a transformation component coupled to an input to create coefficients from the
3 input;
4 a quantization component coupled to the transformation component to create
5 quantized values from the coefficients, each quantized value having an integer part
6 representing a base layer and a fractional part representing enhancement layers;

7 a first encoding component coupled to the quantization component to create a
8 base layer bitstream from the integer parts; and
9 a second encoding component coupled to the quantization component to create a
10 an enhancement layer bitstream from the fractional parts.

1 35. The apparatus of claim 34 further comprising:
2 a reconstruction loop coupled to the quantization component and to the input to
3 remove temporal redundancies from the input.

1 36. The apparatus of claim 34 further comprising:
2 a reconstruction loop coupled to the quantization component and to the
3 transformation component to remove temporal redundancies from the coefficients.

1 37. The apparatus of claim 34 further comprising:
2 a reconstruction loop coupled between the quantization component and the first
3 encoding component to remove temporal redundancies from the integer parts.

1 38. The apparatus of claim 34, wherein the enhancement layers are frequency
2 ordered.

1 39. An apparatus comprising:
2 a decoding component coupled to an enhancement layer bitstream to create
3 quantized fractional values representing enhancement layers from the enhancement layer
4 bitstream;
5 an inverse quantization component coupled to the decoding component to create
6 coefficients from the quantized fractional values;

7 a first inverse transformation component coupled to the inverse quantization
8 component to create the enhancement layers from the coefficients; and
9 an addition component coupled to the first inverse transformation component and
10 further to a second inverse transformation component to combine the enhancement layers
11 with a base layer from the second inverse transformation component.

1 40. The apparatus of claim 39 further comprising:
2 a prediction loop coupled to the second inverse transformation component to add
3 temporal redundancies to the base layer.

1 41. An apparatus comprising:
2 a decoding component coupled to an enhancement layer bitstream to create
3 quantized fractional values representing enhancement layers from the enhancement layer
4 bitstream;
5 a first inverse quantization component coupled to the decoding component to
6 create coefficients from the quantized values;
7 an addition component coupled to the first inverse quantization component and
8 further to a second inverse quantization component to combine the coefficients from the
9 first inverse quantization component with coefficients from the second inverse
10 quantization; and
11 an inverse transformation component coupled to the addition component to create
12 combined enhancement and base layers from the coefficients.

1 42. The apparatus of claim 41 further comprising:
2 a prediction loop coupled to the second inverse quantization component to add
3 temporal redundancies to the coefficients from the second quantization component.

1 43. An apparatus comprising:
2 a first decoding component coupled to an enhancement layer bitstream to create
3 quantized fractional values representing enhancement layers from the enhancement layer
4 bitstream;
5 an addition component coupled to the first decoding component and further to a
6 second decoding component to combine the quantized fractional values from the first
7 decoding component with quantized integer values from the second decoding
8 component;
9 an inverse quantization component coupled to the addition component to create
10 coefficients from the quantized values; and
11 an inverse transformation component coupled to the inverse quantization
12 component to create combined enhancement and base layers from the coefficients.

1 44. The apparatus of claim 43 further comprising:
2 a prediction loop coupled to the second decoding component to add temporal
3 redundancies to the quantized integer values.